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SUBSISTENCE IN FUTURE ALASKAN PARKLANDS: AN OVERVIEW

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INTRODUCTION

Legislative Background. The isolated and remote rural settlements of Alaska are uniquely dependent upon harvest of wild plant and animal resources as a basic element in their economy, culture, and lifestyle. Recognition of this fact was made in the legislative history of the Alaska Native Claims Settlement Act, with the expression of Congressional interest that subsistence needs of the Native people should be protected. In response, the Secretary of the Interior established the following subsistence policy:

> "... existing traditional subsistence uses of renewable resources will be permitted until it is determined by the Secretary that utilization of these resources is neither economically or physically necessary to maintain human life nor necessary to provide opportunities for the survival of Alaskan cultures centering on subsistence as a way of life."

Establishment of new National Park Service areas in Alaska must therefore provide for continued subsistence uses of resources derived from these lands. The National Park Service has undertaken two courses of preparatory action: (1) It has conducted research to determine the nature, importance, and extent of subsistence activities in and around each proposed parkland; and, (2) it has developed, through public involvement, a set of guidelines proposing the manner in which subsistence activities will be

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incorporated into management of new parklands. A copy of these guidelines has been fowarded separately.

SUBSISTENCE RESEARCH: The National Park Service initiated its subsistence research program in 1974, with a year-long study in the proposed Kobuk Valley National Monument region. This work, conducted by a team of anthropologists under Dr. Douglas Anderson of Brown University, resulted in a volume entitled Kuuvangmiit (attached).

Similar studies were undertaken in the Aniakchak Caldera region in 1976 through a contract to the University of Alaska, and the final report on this work is attached. Subsistence activities in the Yukon-Charley National Rivers were investigated by a Park Service researcher in 1976-77. An interim report on this area is also attached.

Recognizing a need for comparable data on all remaining parkland proposals in Alaska, the Park Service initiated a master contract with the University of Alaska in the fall of 1976. This project involved seven field researchers, under the direction of Dr. Richard Nelson, who participated in the earlier Kobuk Valley and Gates of the Arctic studies. Completion is scheduled for November, 1977, but preliminary reports are attached for all of the areas involved.

Studies undertaken as a part of the Park Service subsistence research program include the following basic topics:

1. Description of subsistence activities undertaken by area residents.
2. Delineation of land areas known and utilized for subsistence.
3. Analysis of the relationship between fluctuating resource availability and subsistence activities.
4. Examination of the nature of dependency upon subsistence among all groups of resident users.
5. Description of cultural dimensions of subsistence.
6. Analysis of present and future trends in subsistence, with policy suggestions.

It is important to note that nearly all of these studies have involved residence of six months or longer by researchers in communities affected by future parkland developments. This has allowed maximum opportunity to compile accurate data, and to achieve some understanding of the extremely complex social, cultural, and economic factors impinging upon modern subsistence.

REPORT PURPOSES. The intent of this preliminary report is to compile, in highly summarized form, basic information on the topics listed above for all proposed Alaskan parklands. Each section of the report deals with a specific proposal, but in many cases the information applies more broadly. Ths is especially true for discussions of subsistence trends, cultural

factors, ethnic considerations, environmental impacts, and effects of proposed subsistence use guidelines. Those interested in a specific topic are urged to consult some or all of the area reports below for detailed information.

This Overview Section is intended to summarize the data very briefly, and to present some generalizations about subsistence in rural Alaska. At the same time, it emphasizes the extremely important regional differences which occur in all aspects of subsistence. These differences preclude any assumption that patterns or processes occuring in one proposal area will necessarily occur in another.

SUBSISTENCE AND THE SUBSISTENCE USER

The Nature of Subsistence. Modern subsistence in rural Alaska is part of an evolving cultural and economic pattern, strongly grounded in tradition but much affected by the growing presence of western man. It is far too complex to define simply, or perhaps to define at all. Subsistence is loosely understood to be the harvest of wild resources to provide food and raw materials for personal use, in accordance with established custom and tradition. It is strongly associated with rural Alaska, and with Native people. Many Whites also participate in this lifeway, however, and consider themselves equally committed to it.

Subsistence and wage earning are usually conceived as opposites, but in fact they are the poles of a continuum that includes all Alaskans. Subsistence users are regarded as those people who

earn little cash and therefore have a special dependence on the land. All subsisters receive some cash income, and not uncommonly they earn rather high wages on a seasonal or short-term basis.

A second dichotomy is drawn between the subsistence user and the sport or recreational hunter. Again, these are the extremes of a continuum that grades imperceptably from one to the other. Somewhere along this continuum, a line will have to be drawn and criteria established, designating who will be classified as subsistence users of natural resources. The results of these studies, together with proposed subsistence guidelines, will comprise a basis for making these decisions.

The delineation of subsistence uses cannot be entirely based upon economic considerations. Subsistence is a lifestyle, founded on dependence upon natural resources, but entailing a whole constellation of cultural practices, social and psychological processes, and forms of personal commitment. Designating "valid" subsistence through use of these criteria, without inadmissable dependence upon racial affiliation, will be as elusive as it is important.

The Subsistence Users. People who would generally be considered subsistence users include a broad spectrum of contemporary Alaskans. They are tradition-bound Eskimos and Indians, younger Natives with limited knowledge of these traditions, and Whites who are partially assimilating to Native culture and lifeways. They are true American pioneers and frontiersmen, established settlers,

and recent back-to-the-land'ers. The great majority, of course, are Native; but a substantial minority are of White or mixed ancestry. Their one trait in common is a special relationship to the land. (For further discussion of Native and White subsisters, see the sections on Lake Clark, Katmai, Wrangell-St. Elias, and McKinley Park.)

MAXIMUM NUMBER OF SUBSISTENCE RESOURCE USERS

Proposal	Resource Users
Aniakchak National Monument	380
Katmai National Monument Extensions	750
Lake Clark National Park	250
Harding Icefield-Kenai Fjords	400
Mount McKinley National Park	
North extension	45
South extension	50
Wrangell-St. Elias National Park	
Coastal	
Cordova Area	
Proposal	0
AEC	2,500
Yakatat	100 - 200
Interior	Not available yet
Yukon-Charley National Rivers	300
Gates of the Arctic National Park	300
Kobuk Valley National Monument	1,200
Cape Krusenstern National Monument	4,000
Chukchi-Imuruk National Reserve	850

These figures are all necessarily estimates, and they indicate the total number of people who use resources derived from within parkland proposals. This includes those who do the actual harvesting (10% to 50% of the above numbers), as well as those who benefit from sharing or communal use of harvest products. They do not give the number of people who actually harvest resources within the proposal areas, because in many cases this information

cannot be estimated with any degree of accuracy. Subsistence activities within any given area fluctuate markedly--according to resource availability, travel patterns, and other factors--and this renders user estimates meaningless over the long term.

It should be further noted that these tabulations do not reveal intensity of use. Thus, an area with 200 resource users might be harvested more intensely than one with a thousand. Recreational or sport users are not indicated here, although they are active to some degree in all proposal areas and probably outnumber subsisters in a few.

SUBSISTENCE HARVESTS IN PROPOSED PARKLANDS

Wild resources taken from within parkland proposals are utilized in various ways. Meat, fish, and plants are consumed at home, shared widely throughout communities, and used for social or ceremonial gatherings. Animal hides provide raw materials for manufacture of clothing and other products, for personal use, trade, or monetary exchange. Furs are also sold commercially. Wood is harvested to provide housing and heating, and is also used for a multitude of other purposes (sleds, drying racks, tent frames, etc).

The table below indicates harvest takes for Alaskan park proposals. The use of these figures is subject to definite limitations, which must be given prominent consideration. First, quantities of a species harvested may be a poor measure of their local importance. For example, a small number of brown bears are taken from

a locality within the Lake Clrk proposal, but they are considered a very significant resource with definite cultural associations. Native people often have strong food preferences, and do not simply rank the value of resource species according to quantity harvested. In addition, certain species or harvesting activities are endowed with special meaning, which again precludes using harvest counts as the single measure of importance.

Aside from this, tabulations of harvest give a deceptive impression of stability. In fact, subsistence takes are subject to constant, sometimes drastic variation. This variability manifests itself in two ways: (1) shifts in distribution when resource species occur abundantly in an area for a season, a year, or several years, and then move elsewhere; and (2) changes in overall resource population levels. Such resource population fluctuations characterize many northern species, and cause marked fluctuation in harvest levels. They can virtually eliminate the use of some species and greatly accelerate the use of others. Thus, no single region (such as a parkland proposal area) is ever used the same way over a span of years, as emphasis shifts from area to area or species to species.

With these limitations in mind, the following tabulations may be utilized only to demonstrate the overall fact of subsistence, not to measure its long term extent or intensity.

MAJOR RESOURCES TAKEN IN PROPOSAL AREAS BY LOCAL RESIDENTS*

(Figures in parentheses are approximate recent annual takes)

Aniakchak National Monument	Moose (9); caribou (16); waterfowl, clams. (Specific data for proposal area not available for other species.
Katmai National Monument Extensions	Moose (25-50); caribou (50-100); beaver (50-100); lynx (5-30); wolf (1-5); wolverine (1-5); land otter (10-30); mink (10-30); fox (20-100); ptarmigan (100-200); salmon (25-50).
Lake Clark National Park	Moose (25-30); caribou (75-125); black bear (10-12); brown bear (1-3); sheep (0-3); hare (200-300); porcupine (100-125); beaver (100-200); wolf (1-3); fox (100-250); lynx (5-30); other furbearers (135-375); ptarmigan (500-600); spruce grouse (100-150); waterfowl (140-250); salmon (8,000-30,000); grayling (1,500-2,000); lake trout (500-750).
Harding Icefield-Kenai Fjords	Mountain goat (1); black bear (2); seal (15); bottom fish (400); salmon (1,000).
Mt. McKinley National Park North Extension	Moose (25-35); caribou (5); black bear (5); beaver (150-250); Other furbearers (470-1140).
South Extension	Moose (10-12); furbearers (30-60); fish.
Wrangell - St. Elias National Park Interior Sections	**Moose (250-300); caribou (100-160); black bear (12-21); brown bear (30-40); Dall sheep (310-363); goat (37-59); bison (15-20); hare (50-700); grouse and ptarmigan (35-200).
Coastal Sections	Moose (2-10); mountain goat (0-2); salmon (2,000-3,500); other fish, crabs, shrimp, seals.
Yukon-Charley National Rivers	Moose (20-30); caribou (4-5); black bear (15-20); sheep (3-5); furbearers (4-20); salmon (9,000-1150 firewood (65 cords).

*Includes AEC's. See statements above regarding limitations of this data.

**Total takes, recreational plus subsistence.

Gates of the Arctic National Park	Caribou (1,000-2,000); sheep (20-50); moose (35-50); bear (35-55); lynx (40-70); beaver (30-50); other furbearers (255-360); ptarmigan (600-900); waterfowl (300-500); salmon (100-200); sheefish (200-300); grayling (2,500-4,000); whitefi: (3,000-4,500); firewood (65-100 cords); berries (80-150gal.
Kobuk Valley National Monument	Caribou (1,000-2,000); moose (20-30); bear (15-30); lynx (10-40); beaver (15-35); other furbearers (60-125); ptarmigan (200-300); waterfowl (1000-2,000); salmon (2,000-8,000); sheefish (500-1000); firewood (20 - 35 cords); berries (40-90 gal.); other plant foods (70-100 gal.).
Chukchi-Imuruk National Reserve	Polar bear (0-10); brown bear (2-8); moose (12-25); bearded seal (45-250); other seals (315-850); ground squirrel (120-375); ptarmigan (650-1000); hare (300-550); wolverine (3-8); fox (150-260); waterfowl (1,100-5,200); eggs (80-120); salmon (2,400-3,800); whitefish (1,800-2,600); other fish (2,100).
Cape Krusenstern National Monument	Ringed seal, beluga whale, caribou, moose, furbearers, ptarmigan, waterfowl, salmon, whitefish, firewood, berries, other edible plants. (Harvest figures not available).

The overall subsistence value of the different proposal areas ranges from very high to very low. In some cases this value remains fairly stable over the long run, but in others it fluctuates considerably as resource concentrations undergo their natural changes. We might find that a proposal area receives little use at present; but as fish or wildlife populations change, or as economic shifts take place, this area may take an increasing importance. And, of

course, the reverse is true. Thus, proposal areas must be seen as elements in a total subsistence system, which may lie fallow or experience intensive use through different periods of time.

IMPACTS OF SUBSISTENCE ACTIVITIES

The extremely important subject of subsistence impacts is considered in some detail for each proposal area in later sections of this report. A careful reading of these individual discussions is strongly recommended.

Impact on Resources. Regarding direct negative impacts of subsistence harvests on wildlife populations, the researchers agree that such impacts are extremely rare and of limited magnitude. Resource species undergo their natural cycles of increase and decline regardless of the annual take by subsisters. The sedentary beaver is the only species normally susceptible to over-harvest; and in this case the impact is extremely localized, never regional.

Interestingly, the only areas in which significant negative impacts on resource populations occur are those extensively used for sport hunting along with subsistence (Katmai, Lake Clark, Yukon-Charley). In such cases, the effects of one cannot be separated from the other. Should parks be established in these areas, means of limiting competition for resources would be available.

The recent decline of the Western Arctic caribou herd has focused attention on possible negative impacts of subsistence harvesting. Initially, Alaska Department of Fish and Game researchers felt that the decline resulted from over-hunting and wolf predation.

They later concluded, however, that a natural population cycle had probably caused the initial reduction of the herd. Then, once it had diminished significantly in size, the continued annual predation and harvest takes began to exceed the herd's now-lowered replacement capacity. (James Davis, ADF&G, personal communication). Strict hunting limitations have been applied to encourage natural recovery of the herd. Very marked natural population cycles have been observed in caribou throughout North America, and have occurred previously in the Western Arctic herd.

Evidence indicates that significant negative impacts of subsistence use upon resource species have seldom occurred. Given past or present levels of utilization, there is no reason to anticipate change in this situation. The use of modern hunting and fishing implements (rifles, fishnets, steel traps) in the subsistence quest has not caused significant damaging effects upon natural resource populations.

Mechanized Travel. The use of mechanized transportation for subsistence has generated some concern, however. This concern is focused primarily on the snow machine, which is widely utilized throughout rural Alaska and has largely supplanted the dog team as a working vehicle. Use of snow machines for direct pursuit of game, especially caribou, may cause animals to abort or die of exhaustion. The problem requires urgent study, especially given the generally low level of Alaskan caribou herds at present.

Indirect impacts of snow machines are principally esthethic--they are noisy; and they range widely, leaving their tracks everywhere on the otherwise pristine snow. Suggestions that snow machines significantly damage vegetation in these remote areas are, in this writer's opinion, without support in fact.

The use of aircraft and all-terrain vehicles (ATV's) in conjunction with subsistence activities has been noted for some proposal areas. This is particularly significant in proposals nearest the urban population centers, while in other areas such uses rarely occur. Overland travel with ATV's may have a noticeable impact on terrain and vegetation (as may the use of automobiles - see later discussion in the Katmai section). Aircraft are sometimes used to gain remote access in support of subsistence activities, where such access is not otherwise possible (see sections on Katmai and Wrangell-St. Elias, coastal portions). Decisions will have to be made on whether such mechanized forms of travel negatively impact wildlife resources or parkland values.

Conclusion. It is important to note that the foregoing discussions, except for those concerning snow machines, deal with the unusual circumstances, not the usual. Of all the possible extractive human uses for Alaska's land, subsistence probably has the lowest impact. Proof for this statement lies in the Alaskan landscape itself. The areas proposed for new parks remain in an essentially pristine condition, with healthy populations of

wildlife and virtually unaltered floral communities. Except for scattered cabins and threading trails, subsistence users have left the landscape practically free of visible human impact. Thus, several thousand years of continuous subsistence use has left us with environments worthy of preservation as the most wild and beautiful in our nation.

FUTURE TRENDS IN SUBSISTENCE ACTIVITY

The future of rural Alaskan subsistence is as difficult to predict as it is important. Processes of change are underway throughout the state, and these are beginning to affect subsistence in various ways. The most important changes are those related to acculturation, population growth, and economic shifts. Each of these is a subject of enormous complexity, however, and these complexities defy our predictive abilities. We can only look at the recent past and present to discern trends, and then guess at the future of these trends. The situation is further complicated by extreme variation in the areas of concern to us here--variation in cultural background, exposure to acculturative influence, economic patterns, and responses to change.

Culture Change. Passage of the Alaska Native Claims Act and construction of the Alaska oil pipeline have precipitated an era of change in Alaska. Rural communities have felt this change strongly--village and regional corporations have been formed, private lands have been granted, high paying jobs have become

available, competition for resources by outsiders has markedly increased, government presence has suddenly escalated, and the general western influence has grown appreciably.

Of course, culture change began more than a century ago in most areas, and so there are ongoing trends as well. Younger Natives have been most strongly affected by past and present forces of change, especially by an educational system which has partially removed them from their traditions. In terms of subsistence, this has made them less skilled and less active than their parents or elders. Some have left the small villages and settled in larger towns or urban centers, largely abandoning the subsistence - lifestyle. But some have remained, and most of these are at least partially active in the subsistence harvest. Of course, there is considerable variation from region to region, because overall levels of acculturation differ so greatly.

What does this mean for the future, in terms of subsistence? In general, the adult and elder generations will essentially maintain present levels of activity (assuming continuity in environmental and economic factors). Some younger Natives are moving into subsistence, especially as they reach adulthood and start families. Others are leaving it behind in favor of wage earning. The cultural underpinnings of subsistence are definitely in a state of decline, but subsistence itself shows signs of continuity.

Population. Along with these trends of culture change, there is a general tendency toward growth in village populations. This generates a question about the ability of natural resources to sustain possible increases in subsistence usage.

Village populations are continuing a pattern of growth that began after introduced diseases caused dramatic reductions earlier in this century. As of the last census, however, the total Native population of Alaska had not returned to its estimated pre-contact level. The use of birth control measures has begun to reduce family size over the past ten years, but most of the villages near park proposals are slowly increasing at present. There is considerable variation, however. The highest growth rates are in the largest towns, which are also least dependent upon wild resources.

Recalling the discussion of culture change above, the tendency for some younger people to leave their villages, or to pursue a cash economy within them, helps to mitigate the effects of population growth. In other words, the number of people moving into subsistence is significantly lower than the rate of population increase might indicate. We cannot accurately predict how these two factors will balance out in the future, and what the long range impacts might be in park areas.

Economic Trends. The difficulty of predicting future subsistence activities is additionally complicated by possible economic trends. Should rural Alaskan cash economies continue to expand, the intensity of subsistence uses is likely to diminish. But regional or national economic stagnation, high inflation rates, or local absence of employment opportunities could accenturate dependence upon food and other products from the land.

Resource Populations. Aside from the three human variables discussed above (acculturation, population, economics), future subsistence patterns may be influenced by resource availability. Short term local fluctuations of wild resources will always exert a strong influence over harvesting activities. But along with this is the possibility that growth in Alaska's total human population will result in overharvest, and in reduction of productive environments through developments such as roads, pipelines, and the like. Competition for wildlife resources between subsistence and sport users is already keenly felt in many areas. Should important resource populations become permanently suppressed by heavy use, subsisters would be forced to utilize alternate species or move increasingly toward a cash economy.

Parklands left open to subsistence utilization, but limiting recreational harvest, could significantly reduce this competition for resources. They would also have the effect of diffusing the harvest over larger areas, with beneficial effects for all species concerned.

IMPORTANCE OF SUBSISTENCE TO RURAL RESIDENTS

Economic Factors. The extent to which local residents are economically dependent upon subsistence resources varies greatly among the areas discussed here. Some communities, the more "urbanized" ones, have very few subsistence users. Others, the small and remote villages, are supported primarily by harvesting resources from the land. Many of these settlements could scarcely

exist without subsistence. Aside from this variation, there is everywhere a range of dependency among households, from little reliance to almost complete reliance upon wild resources.

In areas where subsistence is economically important, extreme hardship would result if such resources became scarce or unavailable. In the absence of significant wage opportunities, government support (welfare, unemployment compensation, and so on) would be the only option. Besides direct use of resources for food, subsisters also take fur animals for manufacture of clothing and cut wood to provide shelter and heat. The replacement value of these resources for a small village in northern Alaska would surely exceed a million dollars annually. Transportation problems and inflated prices would make such replacement difficult and costly. And, of course, the high nutritional values of subsistence foods would not be equalled, nor would the cultural-psychological value be sustained.

Cultural Factors. Subsistence is not only an economic pattern, it is elementally interconnected with culture, with the traditions of Native Eskimos, Indians, and Aleuts. The extent of this cultural component is also highly variable, according to regional differences in response to acculturative influences. Throughout rural Alaska, however, Native people retain an intense attachment to the idea of subsistence. This is not only based upon physical or economic need, but also, upon a sense of identity and continuity with tradition. Subsistence

provides Native foods, without which people feel they cannot retain physical vitality and a sense of well-being. Subsistence is the vehicle for perpetuating close interactions with the environment, from which many elements of Native culture derive. It also provides the foundation for village social organization, which is based on sharing and communality. In some areas, it is the basis for traditional religious beliefs and practices, which are still followed today. These topics are discussed in some detail in several sections of this report (see Chukchi-Imuruk and Gates of the Arctic).

Intimate dependence upon, and direct interaction with, the environment has been the principal force in the evolution of Native Alaskan cultures. Eskimo and Indian languages, social systems, personality patterns, values, religions, ethics, and attitudes continue to be strongly conditioned by this land-oriented existence. The hunting and gathering lifestyle itself is highly valued, and people often express a profound attachment to it. Thus, many rural Alaskans opt for a subsistence livelihood, not just because it provides for them economically, but because it allows them to live where they most prefer and to achieve what they have learned to value most as human beings. There is no question whatsoever that the single dominant concern of rural Alaskan Natives today is the fate and future of subsistence.

SUBSISTENCE GUIDELINES AND MANAGEMENT

Many of the following sections of this report contain detailed critiques of the proposed subsistence use guidelines, and

thoughts concerning future management of subsistence in Alaskan parklands. A reading of these sections will reveal some of the problems that must be faced in promulgating legislation and initiating productive management. New Alaskan parklands can foster subsistence and related cultural practices by assuring continuity of the relationship between people and their traditional lands. By eliminating developments such as mines, pipelines, and new settlements, and by reducing the level of recreational harvests, parks can minimize uses which conflict with subsistence. The habitat protection offered by parks must be coupled with mechanisms facilitating local involvement in management decisions to assure continued productive subsistence activities. Fortunately, the subsistence guidelines have been kept general enough to encompass the great regional variations that will be encountered.

The guidelines will also present management problems, however. Local residents will strongly resent the increased regulation that they entail, especially in areas which have rarely known any form of regulation at all. Determination of eligibility for resource use, through local subsistence resource councils, would not only be difficult but also extremely devisive. In small communities such as these, judgements over relatives and neighbors regarding usage privileges could have far-reaching consequences.

It is clear that the Park Service wishes to assure that persons already engaged in subsistence within an area may continue to do so. This goal might best be accomplished by simply granting

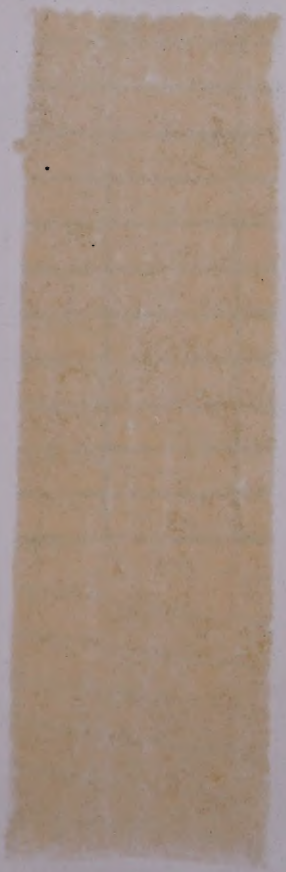
subsistence privileges on the basis of established residence within an area. This would circumvent much potential difficulty, eliminate a probably-unworkable system, and in effect accomplish the same purpose.

Regulation of mechanical transportation is another source of potential difficulty, being a focus of conflicting sentiments among different categories of park users. There are other problems as well, ranging from definitions of "need" and measures of resource importance, to the necessity for cooperative land management among various owners and agencies. Again, these subjects are dealt with in later sections of the report (see Katmai, Lake Clark).

Perhaps the most important positive aspect of the subsistence guidelines is that they exist--they have been formulated and submitted for public input, and they continue to evolve. By preparing these guidelines far in advance, and by compiling volumes of information on the activities they are intended to manage, the Park Service is maximizing the chances for successful integration of subsistence into new Alaskan parklands.

A final point should be added. Examination of harvest data for some proposals (or parts of proposals) reveals a low level of subsistence utilization. At first glance, it might seem best or easiest to simply close such areas to subsistence harvests. There are two reasons for not doing this: First, the impact of

subsistence activity in these areas is negligable, and there is little reason or justification for closure. And second, a very strong and immediate reaction could be expected from Alaskan Native leaders, and from local subsistence users who would deeply resent the loss of actual or potential harvest areas. In short, little stands to be accomplished for the environment, and much stands to be lost for agencies and people.



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